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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**RIN 1018-AB66**

**Endangered and Threatened Wildlife and Plants; Proposal to List the Mitchell's Satyr as Endangered**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

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**SUMMARY:** The U.S. Fish and Wildlife Service (Service) proposes to list the Mitchell's satyr (*Neonympha mitchellii mitchellii*) as an endangered species pursuant to the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Recent heavy collecting pressure on this butterfly has resulted in the loss of several populations, and collection is believed to imminently threaten the survival of several more populations. Due to the need to immediately decrease collection of the

species by affording it the protection of the Act, the Service exercised its emergency listing authority on June 25, 1991, by publishing an emergency rule which gave this species immediate and temporary endangered status and the resulting protection under the Act. The emergency rule provided Federal protection for 240 days during which the Service must initiate the normal listing process to ensure longterm protection for the species. This proposal initiates that process and provides an opportunity for public comment and hearings (if requested). This proposal does not include the North Carolina subspecies, *N. m. francisci*, which is presumed extinct at this time.

**DATES:** Comments from all interested parties must be received by November 12, 1991. Public hearing requests must be received by October 28, 1991.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Twin Cities Regional Office, U.S. Fish and Wildlife Service, Division of Endangered Species, Federal Building, Fort Snelling, Twin Cities, Minnesota 55111. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** William F. Harrison, Acting Chief, Division of Endangered Species, at the above address (telephone 612/725-3276 or FTS 725-3276).

#### SUPPLEMENTARY INFORMATION:

##### Background

*N. m. mitchellii* is the nominate subspecies of one of two North American species of *Neonympha*. It was described by French in 1889 from a series of ten specimens collected by J.N. Mitchell in Cass County, Michigan (French 1889). It is a member of the family Nymphalidae (over 6,400 species worldwide), subfamily Satyrinae (estimated 2,400 species).

(The Act defines "species" to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife \* \* \*" (§ 4.(15)). Therefore, although taxonomically recognized as a subspecies, *N. m. mitchellii* will be referred to as a "species" throughout the remainder of this proposal. This legal, as opposed to biological, use of the term "species" should not be understood to mean that this proposal covers the entire species *Neonympha mitchellii*. This proposal covers only the northern subspecies *N. m. mitchellii*, and does not include the North Carolina subspecies *N. m.*

*francisci* which is believed to be extinct.)

Mitchell's satyr is a medium sized (38-44 millimeter wingspan) butterfly with an overall rich brown coloration. A distinctive series of submarginal yellow-ringed black circular eyespots (ocelli) with silvery centers are found on the lower surfaces of both pairs of wings. The number of ocelli on the forewing varies between the sexes, with males generally having 4 (range 2-4) and females having 6 (range 5-6). The eyespots are accented by two orange bands along the posterior wing edges, as well as two fainter orange bands across the central portion of each wing. It is distinguished from its North American congener *N. areolata* by the latter's well-marked ocelli on the upper wing surfaces, as well as the lighter coloration and stronger flight of *N. areolata* (French 1889; McAlpine et al 1960; Wilsmann and Schweitzer 1991).

*N. m. mitchellii* is one of the most geographically restricted butterflies in North America. Historical records exist for approximately 30 locations in four States, ranging from southern Michigan and adjacent counties of northern Indiana into a single Ohio county, with several disjunct populations in New Jersey. The species has been documented from a total of 17 counties (Badger 1958; Martin 1987; Pallister 1927; Rutkowski 1968; Shuey et al 1987b; Wilsmann and Schweitzer 1991).

A second *Neonympha mitchellii* subspecies was discovered at Ft. Bragg, North Carolina in 1983 (Parshall and Kral 1989). This subspecies, *N. m. francisci*, is believed to have been collected to extinction since that time. Although additional suitable habitat probably exists on, and adjacent to, Ft. Bragg, no additional populations have been discovered (Schweitzer 1989). This proposal does not include *N. m. francisci*.

Although the species has been reported from Maryland, the lack of suitable habitat makes it more likely that those 1940's specimens were misidentified members of a *Neonympha areolata* subspecies. Apparently suitable habitat exists in New York, Connecticut, Massachusetts, and Pennsylvania. However, searches in these States have failed to locate any *N. m. mitchellii* populations (Schweitzer 1989; Wilsmann and Schweitzer 1991).

The habitat occupied by the species consist solely of wetlands known as fens. This is an uncommon wetland habitat type characterized by calcareous soils and fed by carbonate-rich water from seeps and springs. Fens are most frequently components of larger wetland complexes. Due to the superficial

resemblance of fens and bogs, the habitat of Mitchell's satyr has sometimes been erroneously described in the early literature as acid bogs (McAlpine et al 1960; Shuey 1985; Shuey et al 1987a; Wilsmann and Schweitzer 1991).

From 1985 through 1990 the Service sponsored intensive searches of over 100 sites having suitable habitat for the species throughout its range. The sites visited were either known historical locations for the species, or were chosen because of the presence of a fen. All historical locations were checked if they could be relocated and if the fen habitat still existed. Survey results indicated the species occurred at only 15 sites, two of which were not historically known. Therefore, the species has disappeared from approximately one-half of its historical locations (30). No extant populations have been found in Ohio, and the sole extant 1985 population in New Jersey is believed to have been extirpated by collectors subsequent to the survey. Additional 1991 searches in New Jersey failed to locate any additional populations (Breden, New Jersey Natural Heritage Program, 1991, pers. comm.). Thus, the species is currently believed to exist in nine counties in Indiana and Michigan. Due to the extent of these and other recent surveys it is unlikely that many additional sites will be found (Wilsmann and Schweitzer 1991; Shuey et al 1987b), although survey efforts are continuing.

A letter from Charles L. Remington, dated November 19, 1974, requested the Service work on protecting Mitchell's satyr (letter from Charles L. Remington to Dr. Paul A. Opler, U.S. Fish and Wildlife Service, dated November 19, 1974). That letter was treated as a petition to list the species as threatened or endangered. The Service subsequently found (49 FR 2485, January 20, 1984) that insufficient data was available to support listing at that time. The Service's May, 1984, Animal Notice of Review (49 FR 21664-21675) listed *Neonympha mitchellii* as a category 3C species, indicating that at that time the species was believed to be too abundant for consideration for addition to the endangered and threatened species lists. In a subsequent January 6, 1989, Animal Notice of Review (54 FR 554-579) the species was upgraded to a category 2 candidate for listing, indicating renewed concern for the species' welfare, and encouraging further studies into the status of the species. The most recent status survey (Wilsmann and Schweitzer 1991) indicates that the species has experienced significant

range reduction and should receive the protection of the Act. The Service analyzed the status survey and determined that the species should be protected from over-collection by an emergency listing as an endangered species. The emergency listing was published, and became effective, on June 25, 1991, (56 FR 28825-828) and provides protection under the Act until February 20, 1992.

#### Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.* and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in Section 4(a)(1). These factors and their application to the Mitchell's satyr (*N. m. mitchellii*) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** Fen habitat is being destroyed and degraded by human activities and by natural succession. Human induced destruction of historical sites has been documented in at least three cases. One Michigan site has been destroyed by urban development. Sites in Michigan and Ohio have been lost by conversion to agriculture. Another extant population in Michigan has had a portion of its habitat destroyed by hog farming activities and all terrain vehicle use. These activities constitute ongoing threats to other sites with extant populations of *N. m. mitchellii* (Shuey et al 1987a; Schweitzer 1989; Martin 1987; Wilsmann and Schweitzer 1991).

One Michigan site is bisected by a highway which is scheduled for realignment. Mitchell's satyr habitat will be destroyed or degraded by the project as proposed. Discussions are underway with Michigan Department of Transportation officials to have the plans modified to diminish or eliminate the adverse impact on the species.

Although natural succession in fens is incompletely understood, it appears that adjacent human activities can speed succession and subsequent loss of Mitchell's satyr habitat. For example, nearby drainage ditches may alter the hydrologic regime in the fen, resulting in lowered water levels, more xeric soil conditions, and increased invasion of brush and trees into the fen. There is evidence that this is occurring at one Michigan site (Wilsmann, Michigan Natural Features Inventory, 1991, pers. comm.).

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** Mitchell's satyr has long been sought by butterfly collectors, and there is evidence that collection of the species continues despite its endangered or threatened classifications under Michigan, Indiana, and New Jersey rare species laws. Subsequent to the 1985 survey of New Jersey fens it is believed that the State's last remaining *N. m. mitchellii* population was eliminated by collectors. A collector's glassine envelope was found at the site during one survey. Another New Jersey *N. m. mitchellii* site, well known to butterfly collectors, was extirpated in the 1970's by over-collection. The other subspecies of *Neonympha mitchellii*, *Neonympha m. francisci*, is believed to have been collected to extinction in North Carolina. (Wilsmann and Schweitzer 1991; Breden 1991, pers. comm.; Schweitzer, The Nature Conservancy, 1991, pers. comm.).

Well-worn human paths have been seen at the site of several extant populations in Michigan during late-1980's status surveys. These paths wind through *N. m. mitchellii* habitat in the manner that would be expected of knowledgeable collectors and are viewed as evidence that collections are continuing, despite the species being listed and protected by State statute. Subsequent to the June 25, 1991, emergency listing several butterfly collectors were encountered by Service Law Enforcement personnel at one well known Michigan Mitchell's satyr site, and fresh trails through prime habitat were seen at nearly every site being patrolled. At least five Michigan sites are sufficiently well known to collectors and/or have sufficiently small Mitchell's satyr populations so as to the extremely vulnerable to local extinction from overcollection during a period of one to several days (Wilsmann 1991, pers. comm.). All known *N. m. mitchellii* sites are believed vulnerable to local extinction by overcollection (Schweitzer 1991, pers. comm.).

**C. Disease or predation.** Little is known about these factors, and there are no indications at this time that they might be contributing to the decline of Mitchell's satyr.

**D. The inadequacy of existing regulatory mechanisms.** Mitchell's satyr is currently listed under State statutes as endangered in Indiana and New Jersey, threatened in Michigan, and extirpated in Ohio. The classification in Michigan has been proposed to be changed to endangered.

Either endangered or threatened status in Michigan prohibits the collection of the species without a

Michigan scientific collection permit. However, the threat of State prosecution has not ended collectors' illegal activities. Michigan Department of Natural Resources officials believe the threat of Federal prosecution will be a more effective deterrent. (Weise, Michigan Department of Natural Resources, Endangered Species Program, 1991, pers. comm.; Wilsmann 1991, pers. comm.).

The Indiana endangered classification provides official recognition of species rarity, but the State's endangered species regulations do not prohibit taking listed insects unless they are also on the Federal endangered and threatened species list. Thus, the classification provides no legal deterrent to continued collection. The ability to legally collect the species under Indiana statutes results in the species being a candidate for heavy collecting pressure and extirpation in that state. (Bacone, Indiana Natural Features Inventory, 1991, pers. comm.).

New Jersey regulations provide total protection for any Mitchell's satyrs that may be rediscovered within the State (Frier-Murza, New Jersey Endangered Species Program, 1991, pers. comm.). The Ohio classification of extirpated carries with it no legal protection. However, if the species is rediscovered in the State, an emergency order can be invoked to list it as endangered and grant it full protection under State statutes (Case, Ohio Department of Natural Resources, Division of Wildlife, 1991, pers. comm.).

**E. Other natural or manmade factors affecting its continued existence.** Mitchell's satyr has only a single flight period annually, lasting approximately two weeks for an individual, and for about three weeks for a population as a whole. It exhibits relatively sedentary behavior and slow, very low level flights. Due to these characteristics the species seems to have only limited ability to colonize new habitat patches, to recolonize historical sites, or to provide significant gene flow among extant populations. Therefore, the isolation of small populations has great potential for local extinction if habitat degradation and/or collection pressure are also occurring (Wilsmann and Schweitzer 1991).

In developing this proposal the Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species. Based on this evaluation, the preferred action is to list Mitchell's satyr as endangered. The species has experienced a severe decrease in the

number of extant populations over its historical range, as well as probable extirpation from two of the four States with historical populations. Due to its continuing appeal to a segment of butterfly collectors, as well as its narrow and well known habitat requirements, approximately one-third of the remaining populations are extremely vulnerable to overcollection and local extinction, and all populations are believed susceptible to collection-induced extirpation.

The Service concluded that conducting the normal listing process would have delayed protection of the species until after the 1991 Mitchell's satyr flight period, thus subjecting the species to an additional year of excessive collecting pressure. The resulting possible extirpations of one or more populations might have severely reduced the likelihood of species survival. Therefore, the Service listed the species as endangered on an emergency basis to provide maximum protection to all known populations during the 1991 flight period. At this time the Service is initiating the normal listing process by proposing the species for endangered status.

#### Critical Habitat

Section 4(a)(3) of the Act requires, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. As discussed under Factor B in the Summary of Factors Affecting the Species, *N. m. mitchellii* is primarily threatened by illegal collecting. Publication of critical habitat descriptions and maps would make Mitchell's satyr more vulnerable to collection, increase the difficulty of protecting the species from illegal take, and significantly increase the likelihood of extinction. All involved parties and most landowners already have been notified of species locations and importance of protecting this species' habitat. Habitat protection will be addressed through the recovery process, including individual landowner contacts, and through the Section 7 jeopardy standard.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition

through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, delivery, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

#### Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other

concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of this proposal. Such requests must be made in writing and addressed to the above Twin Cities, Minnesota, address (see ADDRESSES).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### References Cited

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- French, G.H. 1889. A new species of *Neonympha*. *Can. Ent.* 21:25-27.
- Martin, M.L. 1967. Mitchell's satyr (*Neonympha mitchellii*) in Indiana. Unpubl. Rpt. to Michigan Natural Features Inventory; 6 pp.
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- Pallister, J.C. 1927. *Cissio mitchellii* (French) found in Ohio, with notes on its habits. *Lepidoptera—Satyridae. Ohio J. Sci.* 27:203-204.

Parshall, D.K. and T.W. Kral. 1989. A new subspecies of *Neonympha mitchellii* (French) (Satyridae) from North Carolina. J. Lepid. Soc. 43(2): 114-119.

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Shuey, J.A., J.V. Calhoun, and D.C. Iftner. 1987a. Butterflies that are endangered, threatened, and of special concern in Ohio. Ohio J. Sci. 87(4):98-106.

Shuey, J.A., E.H. Metzler, D.C. Iftner, J.V. Calhoun, J.W. Peacock, R.A. Watkins, J.D. Hooper, and W.F. Babcock. 1987b. Status and habitats of potentially endangered Lepidoptera in Ohio. J. Lepid. Soc. 41:1-12.

Wilsmann, L.A. and D.F. Schweitzer. 1991. A rangewide status survey of Mitchell's satyr, *Neonympha mitchellii mitchellii* (Lepidoptera: Nymphalidae). Unpublished report for FWS Twin Cities Regional Office. 25 pp.

#### Author

The primary author for this proposed rule is Ronald L. Refsnider, U.S. Fish and Wildlife Service, Division of Endangered Species, Federal Building, Fort Snelling, Twin Cities, Minnesota 55111.

#### List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

#### Regulation Promulgation

#### PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "Insects" to the List of Endangered and Threatened Wildlife:

#### § 17.11 Endangered and threatened wildlife.

\* \* \* \* \*

(h) \* \* \*

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
INSECTS							
Satyr, Mitchell's.....	Neonympha mitchellii, Mit-	U.S.A. (IN, MI, NJ, OH) .....	NA .....	E	428E	NA	NA

Dated: August 20, 1991.

Richard N. Smith,

Deputy Director, Fish and Wildlife Service.

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